

Attorney Docket No.: 01CON260P
Application Serial No.: 10/008,925

List of Claims:

Claim 1 (Currently Amended): An auto detection method for use by an answering device for matching a communication protocol of a calling device with one of a plurality of communication protocols being supported by said answering device, said auto detection method comprising the steps of:

receiving a predetermined amount of received data by said answering device from said calling device, wherein said data are indicative of said communication protocol of said calling device;

analyzing said received data to determine one of said plurality of communication protocols; and

transmitting a pre-determined data pattern by said answering device to said calling device during said steps of receiving and analyzing;

running a timer for a pre-determined period during said steps of receiving, analyzing and transmitting; and

configuring said answering device to an analog mode upon expiration of said timer if said analyzing step does not match said received data with one of said plurality of communication protocols.

Claim 2 (Original): The auto detection method of claim 1, wherein said pre-determined data pattern is mark idle.

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Claim 3 (Original): The auto detection method of claim 1, wherein said one of said plurality of communication protocols is V.110 protocol including a plurality of V.110 data rates, and said analyzing step determines one of said plurality of V.110 data rates.

Claim 4 (Original): The auto detection method of claim 3, wherein said analyzing step further determines a line speed by reading a byte of said received data.

Claim 5 (Original): The auto detection method of claim 1, wherein said analyzing step determines that said received data matches an ISDN protocol.

Claim 6(Original): The auto detection method of claim 1, wherein said analyzing step determines that said received data matches a V.110 protocol at 8K data rate if eight 0x7F bytes are found in said received data.

Claim 7 (Original): The auto detection method of claim 1, wherein said analyzing step determines that said received data matches a V.110 protocol at 16K data rate if four 0x3F bytes are found in said received data.

Claim 8 (Original): The auto detection method of claim 1, wherein said analyzing step determines that said received data matches a V.110 protocol at 32K data rate if two 0x0F bytes are found in said received data.

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Claim 9 (Original): The auto detection method of claim 1, wherein said analyzing step determines that said received data is a V.110 protocol at 8K data rate if a plurality of first bits from each of a plurality of octets of said received data match a predetermined pattern.

Claim 10 (Original): The auto detection method of claim 1, wherein said analyzing step determines that said received data is a V.110 protocol at 16K data rate if a plurality of first and second bits of each of a plurality of octets of said received data match a predetermined pattern.

Claim 11 (Original): The auto detection method of claim 1, wherein said analyzing step determines that said received data is a V.110 protocol at 32K data rate if a plurality of first, second, third and fourth bits of each of a plurality of octets of said received data match a predetermined pattern.

Claim 12 (Original): The auto detection method of claim 1 further comprising the step of configuring said answering device according to said one of said plurality of protocols determined in said analyzing step.

Claim 13 (Cancelled)

Claim 14 (Currently Amended): An auto detector for use by an answering device for matching a communication protocol of a calling device with one of a plurality of communication protocols being supported by said answering device, said auto detector comprising:

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a receiver capable of receiving received data from said calling device;

a memory capable of buffering a predetermined amount of said received data, wherein said data are indicative of said communication protocol of said calling device;

a processor capable of analyzing said received data to match said received data with one of said plurality of communication protocols; and

a transmitter capable of transmitting a pre-determined data pattern by said answering device to said calling device while buffering and analyzing said received data;

wherein said processor runs a timer for a pre-determined period and configures said answering device to an analog mode upon expiration of said timer if said processor does not match said received data with one of said plurality of communication protocols.

Claim 15 (Original): The auto detector of claim 14, wherein said pre-determined data pattern is mark idle.

Claim 16 (Original): The auto detector of claim 14, wherein said one of said plurality of communication protocols is V.110 protocol including a plurality of V.110 data rates, and said processor determines one of said plurality of V.110 data rates.

Claim 17 (Original): The auto detector of claim 16, wherein said processor further determines a line speed by reading a byte of said received data.

Claim 18 (Original): The auto detector of claim 14, wherein said processor determines

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that said received data matches an ISDN protocol.

Claim 19 (Original): The auto detector of claim 14, wherein said processor determines that said received data matches a V.110 protocol at 8K data rate if eight 0x7F bytes are found in said received data.

Claim 20 (Original): The auto detector of claim 14, wherein said processor determines that said received data matches a V.110 protocol at 16K data rate if four 0x3F bytes are found in said received data.

Claim 21 (Original): The auto detector of claim 14, wherein said processor determines that said received data matches a V.110 protocol at 32K data rate if two 0x0F bytes are found in said received data.

Claim 22 (Original): The auto detector of claim 14, wherein said processor determines that said received data is a V.110 protocol at 8K data rate if a plurality of first bits from each of a plurality of octets of said received data match a predetermined pattern.

Claim 23 (Original): The auto detector of claim 14, wherein said processor determines that said received data is a V.110 protocol at 16K data rate if a plurality of first and second bits of each of a plurality of octets of said received data match a predetermined pattern.

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Claim 24 (Original): The auto detector of claim 14, wherein said processor determines that said received data is a V.110 protocol at 32K data rate if a plurality of first, second, third and fourth bits of each of a plurality of octets of said received data match a predetermined pattern.

Claim 25 (Original): The auto detector of claim 14, wherein said processor further configures said answering device according to said one of said plurality of protocols.

Claim 26 (Cancelled)

Claim 27 (Original): An auto detection method for use by an answering device for matching a communication protocol of a calling device with one of a plurality of communication protocols being supported by said answering device, said auto detection method comprising the steps of:

buffering a predetermined amount of received data by said answering device from said calling device, wherein said data are indicative of said communication protocol of said calling device; and

analyzing said received data to match said received data with one of said plurality of communication protocols, including a V.110 protocol, an ISDN protocol and a PIAFS protocol.

Claim 28 (Original): The auto detection method of claim 27 further comprising the step of transmitting a pre-determined data pattern by said answering device to said calling device during said steps of buffering and analyzing.

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Claim 29 (Original): The auto detection method of claim 28, wherein said pre-determined data pattern is mark idle.

Claim 30 (Currently Amended): The auto detection method of claim ~~24~~ 27, wherein said V.110 protocol includes 8K, 16K, 32K, and 64K data rates.

Claim 31 (Currently Amended): An auto detection method for use by an answering device for matching a communication protocol of a calling device with one of a plurality of communication protocols, including a V.110 communication protocol, being supported by said answering device, said V.110 communication protocol having an 8K data rate, said auto detection method comprising the steps of:

buffering a predetermined amount of received data by said answering device from said calling device, wherein said data are indicative of said communication protocol of said calling device;

extracting a plurality of first-bit positions from each of a plurality of octets of said received data to generate a first bit pattern;

masking one or more bits of said first bit pattern to generate a second bit pattern; and

comparing said second bit pattern with a predetermined test pattern to determine said 8K data rate;

running a timer for a pre-determined period while matching said communication protocol of said calling device with said one of said plurality of communication protocols being supported

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by said answering device; and

configuring said answering device to an analog mode upon expiration of said timer if said matching step does not match said received data with one of said plurality of communication protocols being supported by said answering device.

Claim 32 (Currently Amended): The auto detection method of claim 31, wherein said V.110 communication protocol further has a 16K data rate, said auto detection method further comprising the steps of:

extracting a plurality of first-bit and second-bit positions from each of a plurality of octets of said received data to generate a third bit pattern;

masking one or more bits of said third bit pattern to generate a fourth bit pattern; and

comparing said fourth bit pattern with said predetermined test pattern to determine said 16K data rate.

Claim 33 (Currently Amended): The auto detection method of claim 31, wherein said V.110 communication protocol further has a 32K data rate, said auto detection method further comprising the steps of:

extracting a plurality of first-bit, second-bit, third-bit and fourth-bit positions from each of a plurality of octets of said received data to generate a third bit pattern;

masking one or more bits of said third bit pattern to generate a fourth bit pattern; and

comparing said fourth bit pattern with said predetermined test pattern to determine said 32K data rate.

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Claim 34 (Currently Amended): The auto detection method of claim 33, wherein said answering device further supports a PIAFS communication protocol further having a 32K data rate, said auto detection method further comprising the step of comparing said fourth bit pattern with a PIAFS SYNC WORD.

Claim 35 (Original): The auto detection method of claim 31, wherein said extracting step extracts thirty-two first-bit positions of thirty-two octets to generate said first bit pattern, said masking step masks said first bit pattern with 0x010101FF to generate said second bit pattern, and said comparing step compares said second bit pattern with 0x01010100.

Claim 36 (New): The auto detection method of claim 1, wherein said analyzing step analyzes said received data to match said received data with said one of said plurality of communication protocols, including a V.110 protocol, an ISDN protocol and a PIAFS protocol.

Claim 37 (New): The auto detector of claim 14, wherein said processor analyzes said received data to match said received data with said one of said plurality of communication protocols, including a V.110 protocol, an ISDN protocol and a PIAFS protocol.

Claim 38 (New): An auto detection method for use by an answering device for matching a communication protocol of a calling device with one of a plurality of communication protocols being supported by said answering device, said auto detection method comprising the steps of:

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receiving a predetermined amount of received data by said answering device from said calling device, wherein said data are indicative of said communication protocol of said calling device;

analyzing said received data to determine one of said plurality of communication protocols; and

transmitting a pre-determined data pattern by said answering device to said calling device during said steps of receiving and analyzing;

wherein said analyzing step analyzes said received data to match said received data with said one of said plurality of communication protocols, including a V.110 protocol, an ISDN protocol and a PIAFS protocol.

Claim 39 (New): An auto detector for use by an answering device for matching a communication protocol of a calling device with one of a plurality of communication protocols being supported by said answering device, said auto detector comprising:

a receiver capable of receiving received data from said calling device;

a memory capable of buffering a predetermined amount of said received data, wherein said data are indicative of said communication protocol of said calling device;

a processor capable of analyzing said received data to match said received data with one of said plurality of communication protocols; and

a transmitter capable of transmitting a pre-determined data pattern by said answering device to said calling device while buffering and analyzing said received data;

wherein said processor is configured to analyze said received data to match said received

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data with said one of said plurality of communication protocols, including a V.110 protocol, an ISDN protocol and a PIAFS protocol.